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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,609	03/01/2004	Anthony Steve Pearson	SJO920030089US1	9579

45216 7590 03/06/2007  
KUNZLER & ASSOCIATES  
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SALT LAKE CITY, UT 84111

EXAMINER
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HO, BINH VAN

ART UNIT	PAPER NUMBER
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2163

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/06/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/790,609

Applicant(s)

PEARSON ET AL.

Examiner

Binh V. Ho

Art Unit

2163

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,5-20 and 24-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,5-20 and 24-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03/01/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This is a response to amendment filed 12/21/2006.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 5-12, 14, and 16-20, 24-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Dings (US 6,978,282).

(Claims 1, 11, 17, 20, and 30-32)

Dings discloses in figures 1, 5-6, 13-15, 17-19, and 21-24 An apparatus for managing multiple copy versions of a source volume, the apparatus comprising a replication record management module configured to maintain a current replication record descriptive of a current copy version of a source volume; a pre-pairing record management module configured to maintain a future pre-pairing record descriptive of a future copy version of the source volume; a copy record module configured to create a copy record from a pre-copy record, the pre-copy record comprising one of the current replication record and the future pre-pairing record; a replication module configured to replicate the source volume on a target volume, create a new copy version of the source volume according to the copy record, and establish a new

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replication record descriptive of the new copy version of the source volume; and the replication record management module is further configured to compare the new replication record to the current replication record and to break a copy pair for a removed source volume present in the current replication record, but not present in the new replication record (col. 7, lines 18-29, 61-64; col. 9, lines 57 +; col. 11, lines 5-20; col. 12, lines 20-58; col. 14, lines 6-17, 53 +; col. 15, lines 10-17, 40-45, 59 +; col. 18, lines 1 +; col. 19, lines 1 +).

(Claims 5-7, and 24-26)

Dings discloses in figures 5-6, 14-15, 17-19, and 22-24 wherein the replication record management module is further configured to maintain a previous replication record descriptive of a previous copy version (col. 7, lines 18-29, 61-64; col. 11, lines 7-9; col. 12, lines 20-26, 44 +; col. 15, lines 10-17, lines 64-67).

(Claims 8, and 27)

Dings discloses in figures 5, 14, and 17-18, further comprising a target selection module configured to locate a target volume available for use to create a copy version of the source volume (col. 11, lines 5-9; col. 12, lines 44-58, col. 18, lines 1-10).

(Claims 9, 10, 28, and 29)

Dings discloses in figures 14, and 17-18, the copy record module being further configured to verify the future pre-pairing record and to account for a change in one of a source pool and a target pool (col. 6, lines 5-13).

(Claims 12 and 14)

Dings discloses in figures 1, 5, 14, and 17-18, the change in the data copy environment comprising an addition of a source volume to a source pool.

(Claim 16)

Dings discloses in figures 1, 5, 14, and 17-18, wherein dynamically managing the plurality of replication records comprising verifying the current status of a volume in the data copy environment and updating a replication record in response to a change from a previous status of the volume (col. 7, lines 18-29; col. 12, lines 20-26; col. 15, lines 10-20, 52-67).

(Claims 18 and 19)

Dings discloses in figures 1, 5, 14, and 17-18, the backup manager further comprises a backup information module configured to store the backup information, the backup information comprising a replication record, a volume inventory, a copy pool inventory, and a dataset inventory (col. 12, lines 20-26; col. 15, lines 10-20, 42-45, 64-67).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dings (US 6,978,282) in view of Ashton (US 6,959,369).

(Claims 13 and 15)

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Dings discloses substantially all of the elements, except a removal of a source / target volume from a source / target pool. Ashton teaches in figures 1, 3, 5-6, the storage may comprising an internal storage device or an attached or network accessible storage. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a removal of a source or target volume for convenience.

### **Response To The Arguments**

6. Applicant's arguments filled on 05/09/2006 have been fully considered. Applicant made the following arguments:

Accordingly, Applicant submits that, "Dings does not teach breaking a copy pair for a removed source volume".

*The Examiner respectfully disagreed with the Applicant's argument above, since Ding discloses "The dismount/cleanup function removes all volume group, logical volume, and filesystem objects from the target host.", col. 11, line 7-20; col. 12, lines 36-43.*

***Conclusion***

7. Applicant's amendment necessitated the new ground of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

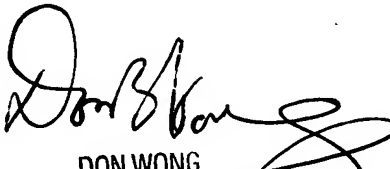
### Inquiry

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh V. Ho whose telephone number is 571 272 8583. The examiner can normally be reached on M-F from 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don K. Wong can be reached on 571 272 1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Binh V Ho  
Examiner  
Art Unit 2163

  
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